

GRYPHON

DESCRIPTION

The Gryphon field is in Quad 9 and is located approximately 201 miles north east of Aberdeen at a water depth of 112m. It is primarily in block 9/18b although a small portion extends into 9/18c. The field was discovered in 1987 with first production in October 1993. Oil production peaked in 1995 ca. 50,000bbl/d. It is serviced by the Gryphon Alpha floating production, storage and offloading facility (FPSO) which also has subsea tiebacks from Tullich, Maclure and Ballindalloch developments.

In 2011 Gryphon was put into dry-dock for extensive upgrades and production was re-started in May 2013. The oil is stored in cargo tanks in the hull and exported by tanker. Gas is exported via the Leadon pipeline to the Beryl Alpha platform, where it is transported to shore via the SAGE system.

FPSO Vessel Data

- Length – 257.6m
- Beam – 40.98m
- Depth – 23.61m
- Draft, design + scantling – 12.7 – 16.5m
- Displacement – 126,663 tonnes (@16.5m draft)



OWNERSHIP

The Gryphon FPSO is operated by TotalEnergies. Ownership interests in the FPSO are as follows:

Company	Equity Interest
TotalEnergies E&P North Sea UK Limited	86.50%
Sojitz Energy Development Limited	13.50%
Total	100.00%

SERVICES WE PROVIDE

We offer the following service levels to third-party tie-ins subject to available capacity and agreement on commercial terms:

- Accept hydrocarbons that comply with delivery specifications.
- Process hydrocarbons to required criteria.
- Meter / measure / allocate hydrocarbons to specified standards.
- Deliver dry gas into the SAGE system via Leadon pipeline and Beryl Alpha platform.
- Export stabilised crude by shuttle tanker.
- Operate / monitor fields on behalf of tie-in parties.
- Provide technical input as required.
- Provide other 'routine' services.
- Provide other 'non-routine' services depending on type and capacity.

Any third-party approach would be treated on a case-by-case basis when determining the appropriate commercial terms, taking into account issues such as the required level of capital expenditure, product specification, capacity requirements, etc.

Facilities and Technical Information

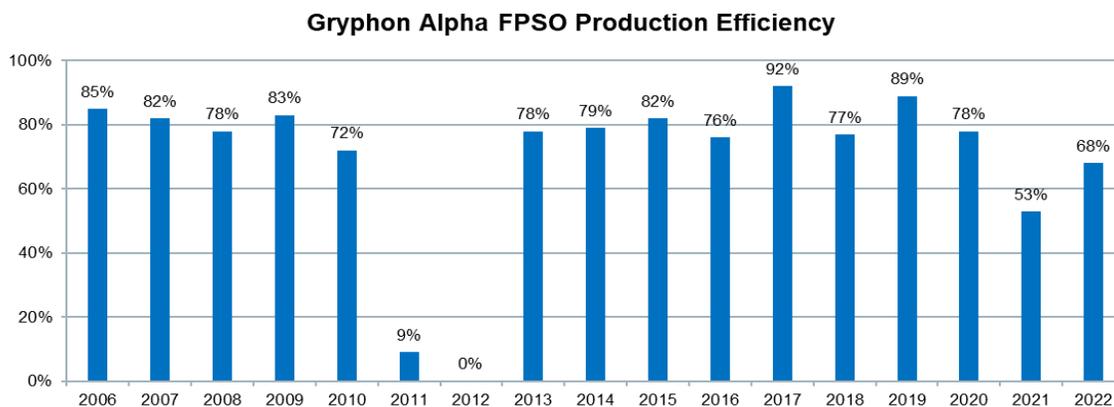
The Gryphon Alpha installation consists of an FPSO facility connected to subsea well clusters. The FPSO is equipped with topsides production facilities which perform conventional separation of gas/oil/water mixtures and compression of gas for export, and for use as fuel, reinjection and lift gas. Crude oil is stored on board and offloaded to shuttle tankers for transportation to shore. In addition, there is a gas export pipeline from the FPSO to the Beryl Alpha installation via the Leadon pipeline, for onward transport to shore via the SAGE system

The FPSO is a Tentech 850C vessel and was purchased by Kerr-McGee in early 1993 and subsequently fitted out with the topsides production facilities. The vessel was originally moved to its offshore location in September 1993, and production commenced in October 1993. The original facility was upgraded in 2003 to include provisions for processing fluids from the Maclure and Tullich reservoirs, as well as a gas export line to Beryl Alpha. Ownership was transferred to Maersk Oil North Sea UK Limited in 2005, and to the TotalEnergies Group in 2018. TotalEnergies E&P North Sea UK Limited (TEPNSUK), part of the TotalEnergies Group, is the duty holder.

The hull and moorings of the Gryphon FPSO are subject to a five-year class renewal cycle which was last renewed in November 2022.

The FPSO has a storage capacity of 540,000 barrels of oil. Gas production is constrained by processing capacities at the Gryphon FPSO, currently limited to 47MMScf/d of gas handling (gas export, gas lift and re-injection) via three compression trains. The glycol dehydration system has an installed capacity of 90MMScf/d (potential future gas expansion capacity). Produced water facilities consists of treatment equipment (design rate of 110,000 bwpd) and reinjection equipment for reservoir pressure maintenance and disposal (design rate of 79,000bwpd). Main power generation for normal operations is provided by two 8.5 MW gas turbine generators, with further power generation provided by up to five 3MW diesel driven generators, according to operational requirements. All five diesel generators are able to operate in parallel with the gas turbine generators.

PERFORMANCE AND RELIABILITY

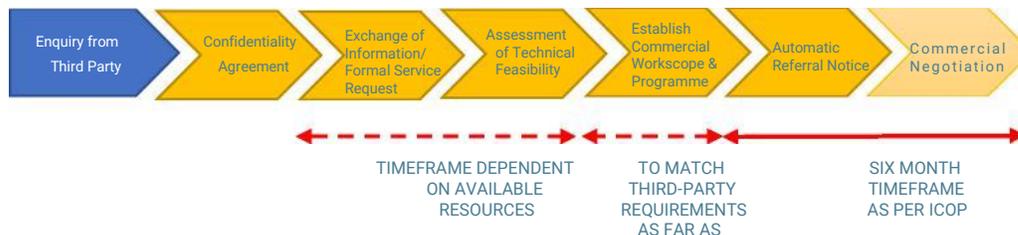


Gryphon Hub production performance record is shown in the adjacent graph. A production efficiency of 68% was achieved in 2022.

Production efficiency is defined as the ratio between actual production and the addition of actual production plus the production (planned and unplanned) shortfalls.

HOW WE WORK

TotalEnergies and the Gryphon Hub owners are committed to the **Commercial Code of Practice** and the **Oil and Gas UK Infrastructure Code of Practice**. We aim to respond in a timely manner to all service enquiries. The typical process for negotiations is as follows:



The process typically starts with a formal written enquiry from the Operator (or substitute commercial operator) of the field development group requiring access to the infrastructure containing relevant field information and an outline of requirements in accordance with the process described in the **Code of Practice on Access to Upstream Oil and Gas Infrastructure on the UK Continental Shelf**.

STANDARD TERMS AND CONDITIONS

We seek to provide both attractive terms and conditions and an equitable negotiation process to parties interested in utilizing Gryphon infrastructure. Individual terms and conditions may vary according to the needs of tie-in parties.

Third parties will be required to execute a standard system tie-in agreement and an individual commercial agreement.

Tariff and Cost Share Arrangements

Operating expenditure (OPEX) is charged based on a pro-rata throughput share of the plant total system cost. This varies over time as a function of total throughput.

In addition, a tariff may be applied to reflect an appropriate risk-reward balance for the services to be provided. This will be dependent upon the level of service, hydrocarbon quality, opportunity costs and modification requirements amongst others.

Bookings & Send or Pay

These conditions are negotiated with incoming parties on an individual basis dependent on the level of service required.

Tie-ins & Additional Equipment

The costs associated with the design, procurement and execution of the tie-in shall be the responsibility of the third party. An appropriate liability and indemnity regime will also be required during the construction and tie-in phase.

Where equipment is installed on the Gryphon FPSO which is exclusive to a particular user field, then OPEX for such equipment will be at the sole cost of that user field. TEPNSUK, as operator of the Gryphon FPSO, would normally perform engineering and modifications work for such equipment on behalf of third parties. Ownership of such additional equipment on the FPSO would be transferred to the Gryphon Owners on completion of the works.

Maintenance

During planned shutdown and modification periods the FPSO may require withdrawal of partial or full services. TEPNSUK shall make every effort to reduce such periods and to liaise with downstream parties and field operators to co-ordinate timing of any shutdowns.

INDICATIVE SYSTEM CAPACITIES

Capacity information	Capacity
Entry Specification	Sweet crude oil
Exit Specification	Oil exported via Tanker- BS&W <0.5vol %, RVP <11psi. Gas via Beryl into SAGE spec: Max inlet pressure 196 bara, min inlet pressure 175 bara, H ₂ S <6 ppmv, water content <63 ppmv, Cricondenbar ≤ 106 bara, CO ₂ content < 5 mole%, O ₂ content < 7 ppmv.
Outline Details of primary separation processing facilities	Oil separation on Gryphon is achieved by two three phase separators in series and a coalescer. The separated oil is cooled and stored. Export oil is pumped from the storage tanks, through the export metering system into a shuttle tanker. Gas is sent to the compression train and the produced water passed to the produced water handling package. A three phase test separator is also provided on Gryphon
Separation Capacity	Maximum capacities: 60,000 bopd & 79,300 bwpd & 47.5 mmscf/d, total liquids 110,000 blpd
Oil Export	Storage capacity of 540,000 barrels
Gas Export	40 mmscf/d
Gas Lift	2.5 mmscf/d per well (typical). 1 x 4" riser supplying the Tullich, Ballindalloch and Maclure fields and 1 x 4" riser supplying the Gryphon field
Gas Compression	47 mmscf/d
Produced Water Handling	79,300 bwpd
Dehydration	90 mmscf/d
H ₂ S Removal	N/A
Water Injection	2 x 100% WINJ pumps with 78,953 bwpd capacity each.

ULLAGE PROFILES

Facilities Description	Capacity	2023	2024	2025 Onwards *
Separation capacity		●	●	n/a
Oil Export		n/a	n/a	n/a
Gas Export		●	●	n/a
Gas Lift		●	●	n/a
Gas Compression		●	●	n/a
Produced Water Handling		●	●	n/a
Gas-Dehydration		●	●	n/a
H2S Removal		n/a	n/a	n/a
Water Injection		●	●	n/a

Ullage as % of system capacity	
<5%	●
5% to 25%	●
>25%	●



CONTACT US

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